



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/308,515

08/11/1999

ROBERT PAUL BLACK

THOM-0007

6283

23377 7590 01/09/2008

WOODCOCK WASHBURN LLP
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER

PIZIALI, ANDREW T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT PAUL BLACK

Appeal 2007-3832
Application 09/308,515
Technology Center 1700

Decided: January 8, 2008

Before EDWARD C. KIMLIN, THOMAS A. WALTZ, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

1 This is an appeal from the final rejection of claims 1, 2, and 4-12, the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The invention relates to a filling for bedding, clothing, and other articles where thermal properties and/or breathability are important. (Spec., p. 1, ¶ 1). Claims 1, 4, 11, and 12 are illustrative of the invention and are reproduced below:

1. An insulating material comprising a non-woven blend comprising a polyester filling fibre and a lyocell fibre, the material formed into a form selected from the group consisting of a padding, a stuffing, and a filling.

4. The non-woven blend of claim 1 comprising, by weight, no more than 80% of the cellulosic fibre.

11. Fibreballs comprising a non-woven blend comprising a polyester filling fibre and a lyocell fibre.

12. A wadding comprising a carded and layered non-woven blend comprising a polyester filling fibre and a cellulosic lyocell fibre.

The Examiner relies on the following prior art references to show unpatentability:

Pedler	GB 1 370 296	Oct. 16, 1974
Donovan	US 4,992,327	Feb. 12, 1991
Kwok	US 5,023,131	Jun. 11, 1991
Gannon	US 5,725,821	Mar, 10, 1998

The Examiner made the following rejections:

1. Claims 4-7 and 10 under 35 U.S.C. § 112, second paragraph, as lacking antecedent basis for reciting “the cellulosic fibre.”
2. Claims 1, 4-8, and 10 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon.
3. Claims 2 and 9 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon and further in view of Kwok.
4. Claim 11 under 35 U.S.C. § 103 as unpatentable over Donovan in view of Gannon.
5. Claim 12 under 35 U.S.C. § 103 as unpatentable over Kwok in view of Gannon.

*Rejection of claims 4-7 and 10 under
35 U.S.C. § 112, second paragraph*

The Examiner contends that there is insufficient antecedent basis for the term “cellulosic fibre” in claims 4-7 and 10. (Ans. 3). Appellant contends that the claims are not indefinite because “there are no other components to which ‘the cellulosic fiber’ could refer other than lyocell.” (Br. 5). We are in agreement with Appellant that there is no lack of clarity in Appellant’s use of the term “cellulosic fibre” to refer to the “lyocell fibre” of claim 1.

*Rejection of claims 1, 4-8, and 10 under 35 U.S.C. § 103
as unpatentable over Pedler in view of Gannon*

The Examiner finds that Pedler discloses the invention as claimed in claims 1, 4-8, and 10 with the exception of lyocell fibre. (Ans. 4). More specifically, the Examiner finds that Pedler teaches a non-woven fibrous material comprising a mixture of polyester fibers and rayon fibers. (Ans. 3-4). The Examiner further finds that “Gannon teaches that non-woven fabrics containing lyocell can be used for applications such as interlinings and apparel fabrics.” (Ans. 4). The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used lyocell fibers in place of the rayon fibers in Pedler’s material in order to improve physical properties such as tenacity. (Ans. 4).

Appellant’s argument is based on his contention that the Examiner employed improper hindsight reconstruction in rejecting the claims. (Reply Br. 5). Appellant maintains that a person of ordinary skill in the art, when considering the subject matter of Pedler, would not have considered the disclosure of Gannon which relates to methods for forming cellulosic material. According to Appellant, “a person skilled in the art of non-woven fibrous materials such as those described in Pedler would have no interest whatsoever in the details of how the constituent fibers are manufactured, merely that the fibers are of the right type and that they possess the desired qualities such as fiber length, fiber thickness, etc.” (Reply Br. 4-5). With respect to claims 4-7, Appellant argues that the Examiner has not demonstrated that the claimed ranges would have been predictable or recognizable without hindsight. (Br. 7). With respect to claim 10, Appellant argues that the Examiner’s rejection is based on an improper official notice of fact, i.e., that “saw-tooth crimping is the most common form of crimped fibers.” (Br. 7).

As noted above, Appellant presents separate arguments as to claims 4-7 as a group and as to claim 10. Accordingly, we separately consider the patentability of each of claims 1, 4, and 10 over the Examiner's proposed combination of Pedler and Gannon.¹

¹ Appellant also indicates that claim 8 is separately patentable. However, as noted by the Examiner (Ans. 14), Appellant has not presented separate arguments as to claim 8. *See* 37 C.F.R. § 41.37(c)(1)(vii) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.").

The issues presented are, therefore: Has the Examiner made accurate and sufficient factual findings such that it is reasonable to conclude that one of ordinary skill in the art would have been motivated to utilize: lyocell fibers in place of the rayon fibers in Pedler's material to achieve the claimed non-woven blend?, a non-woven blend of lyocell and polyester fibers comprising no more than 80% by weight of the lyocell fiber?, a non-woven blend wherein the cellulosic fiber is a saw-toothed crimp fiber? For the reasons discussed below, we answer these questions in the affirmative.

RELEVANT FINDINGS OF FACT

- 1) Pedler "relates to a non-woven fibrous material pad and to a method of making a non-woven fibrous pad." (Pedler, p. 1, ll. 9-11).
- 2) Pedler discloses that the material pad may be used as padding or insulation in upholstery or clothing. (Pedler, p. 2, ll. 26-29).
- 3) Pedler discloses a material pad comprising an upper layer 11 and a lower layer 12 of a synthetic fibre felt material. (Pedler, p. 2, ll. 70-73).
- 4) Pedler defines the term "felt" as including "materials which are referred to in the trade as 'high loft' materials and which are usually made from crimped fibres, such materials also frequently being referred to in the trade as 'fleece'." (Pedler, p. 2, ll. 74-80).

- 5) In the disclosed embodiment, “[t]he synthetic fibre felt material is formed from a plurality of crimped polyester fibres, arranged at random in a thick continuous layer of indefinite length.” (Pedler, p. 2, ll. 81-84). However, Pedler states that “other fibres may be suitable, such as for example, cotton, wool, jute, acrylic, modacrylic triacetate, rayon or polypropylene fibre, or a mixture of fibres, one suitable mixture comprising by weight substantially 45% of a crimped polyester fibre and 55% of a crimped acrylic fibre.” (Pedler, p. 2, ll. 86-93).
- 6) Gannon discloses that lyocell fibre is made by extrusion of a solution of cellulose in a suitable solvent into a coagulating bath. According to Gannon, “[l]yocell fibre is to be distinguished from cellulose fibre made by other known processes, which rely on the formation of a soluble chemical derivative of cellulose and its subsequent decomposition to regenerate the cellulose, for example the viscose process. (Gannon, col. 1, ll. 12-16).
- 7) According to Gannon, “[l]yocell fibres are known for their impressive textile-physical properties, such as tenacity, in comparison with fibres such as viscose rayon fibres.” (Gannon, col. 1, ll. 25-28).
- 8) Gannon further states that “[l]yocell fibre is . . . often found to be more susceptible to fibrillation than other types of cellulose fibre.” (Gannon, col. 1, ll. 39-41). Gannon explains that “[f]ibrillation occurs when fibre structure breaks down in the longitudinal direction so that fine fibrils become partially detached from the fibre, giving a hairy appearance to the fibre and to fabric containing it, for example woven or knitted fabric.” (Gannon, col. 1, ll. 30-35).

9) According to Gannon, “[t]he presence of fibrillated fibres is advantageous in certain end-uses. . . . Fibrillation may also be utilised in the manufacture of non-woven fabrics, for example hydroentangled fabrics, to provide improved cohesion, cover and strength.” (Gannon, col. 1, ll. 44-52).

A reference in a different field from that of the inventor’s endeavor is still reasonably pertinent if the matter with which it deals “logically would have commended itself to an inventor’s attention in considering his problem.” *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992). *See In re GPAC, Inc.*, 57 F.3d 1573, 1578 (Fed. Cir. 1995). *Cf. In re Thrift*, 298 F.3d 1357, 1365 (Fed. Cir. 2002) (Where a second reference identifies the benefits of adding a feature to the primary reference, an obviousness rejection is proper).

We are in agreement with the Examiner’s determination that one of ordinary skill in the art of non-woven fibrous materials, in considering ways to improve breathability of synthetic filling materials such as those described in Pedler, would have considered the use of alternative fibers. Thus, a reference such as Gannon, which discloses the advantages of lyocell fibers over other fibers conventionally used in non-woven materials (Findings of Fact 7-9), logically would have commended itself to the attention of the ordinary artisan.

Appellant has not refuted the Examiner's finding that one of ordinary skill in the art would have understood from Gannon that conventional lyocell fibers have advantages over rayon fibers. Nor has Appellant presented persuasive arguments traversing the Examiner's conclusion that, based on these disclosed advantages, one of ordinary skill in the art would have been motivated to replace the rayon fibers of Pedler with lyocell fibers. Accordingly, we find that a preponderance of the evidence weighs in favor of the Examiner's determination that it would have been obvious at the time of the invention to have used lyocell fibers in place of the rayon fibers in Pedler's material.

Claims 4-7

A prima facie case of obviousness exists where the prior art and claimed ranges overlap, as well as in those cases where the claimed range and the prior art range, though not overlapping, are sufficiently close that one skilled in the art would have expected them to have the same properties. *See, e.g., In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783 (Fed. Cir. 1985). The "normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages." *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1168 (Fed. Cir. 2006).

We find that the Examiner properly established a prima facie showing of obviousness as to the ranges recited in claims 4-7. In particular, we find that the facts and reasons relied on by the Examiner provide a reasonable basis to conclude that the combined teachings of Pedler and Gannon would

have suggested a mixture comprising 45% of a crimped polyester fiber and 55% of a lyocell fiber (Ans. 13). (See Findings of Fact 5 and 7). Appellant directs us to page 2, lines 4-5 of the Specification as providing evidentiary support for their contention that the claimed fiber blend provides an unexpectedly good filling fiber. (Br. 7). However, as explained by the Examiner (Ans. 10-11), the Specification fails to provide the type of evidence necessary to establish that the properties of the claimed fiber are truly unexpected. See *In re Mayne*, 104 F.3d 1339, 1343-44 (Fed. Cir. 1997) (“Applicant's conclusory statements” were insufficient to make a showing that “the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would find surprising or unexpected.”). See also, *In re Huang*, 100 F.3d 135, 139 (Fed. Cir. 1996) (Even though “[a] modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, unless the claimed ranges produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art.”); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) (“Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification.”).

Accordingly, we find that a preponderance of the evidence weighs in favor of the Examiner's determination that the combined teachings of Pedler and Gannon would have suggested a non-woven blend of lyocell and polyester fibers comprising no more than 80% by weight of the lyocell fiber.

Claim 10

In making a rejection an examiner may "take notice of facts beyond the record which, while not generally notorious, are capable of such instant

and unquestionable demonstration as to defy dispute." *In re Ahlert*, 424 F.2d 1088, 1091 (CCPA 1970). The case law provides that the examiner should cite prior art references to support assertions of technical fact in esoteric technologies or specific knowledge of the prior art. *See id.*

In our view, such citations were not required to support the Examiner's notice of the fact that "saw-toothed crimping is the most common form of crimped fibers" (Ans. 4), particularly since Appellant was sufficiently put on notice of the basis of the rejection of appealed claim 10, and, as pointed out by the Examiner, has not challenged the truth of the Examiner's assertion (Ans. 14-15). *See In re Lundberg*, 244 F.2d 543, 551 (CCPA 1957) (examiner's statement accepted as true in light of appellant's failure to question its accuracy or to present contradicting evidence); *In re Fox*, 471 F.2d 1405, 1406-07 (CCPA 1973) (affirming rejection under 35 U.S.C. § 103 without citation of any prior art based on facts that were unchallenged by the appellant).²

Accordingly, we find that Appellant's arguments fail to refute the Examiner's prima facie showing of obviousness as to claim 10.

Rejection of claims 2 and 9 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon and further in view of Kwok

The Examiner finds that Pedler in view of Gannon discloses the invention as claimed with the exception of an explicit teaching that the polyester filling fiber is a polyethylene terephthalate fiber as required by claim 2 and a teaching that the polyester fiber comprises a conjugate fiber as recited in claim 9. (Ans. 6). With respect to claim 2, the Examiner contends that it would have been obvious to have used a copolyester fiber comprising

² *See also*, 37 C.F.R. § 1.104(d)(2).

units of ethylene terephthalate in view of Kwok's teaching that cotton blended with such fibers provides a batt having excellent washability and high strength. (Ans. 6.) With respect to claim 9, the Examiner contends that it would have been obvious to have used fibers in a sheath-core form as taught by Kwok. (Ans. 6-7).

Appellant maintains that Kwok "is not readily combinable with either the Pedler or Gannon references without impermissible picking and choosing." (Br. 8). Appellant points out that Pedler indicates a preference for man-made fibers and teaches away from using the natural fibers, e.g. cotton, disclosed in Kwok. With respect to claim 9, Appellant contends that the Specification provides a specific definition of the term "conjugate fibers" and the Examiner has not identified a disclosure of fibers in Kwok which meet this definition. (Br. 10).

Appellant presents separate arguments as to claims 2 and 9. Accordingly, we separately consider the patentability of each of these claims over the Examiner's proposed combination of Pedler, Gannon, and Kwok.

The issues presented are, therefore: Has the Examiner made accurate and sufficient factual findings such that it is reasonable to conclude that one of ordinary skill in the art would have been motivated to utilize a combination of lyocell fiber and polyethylene terephthalate fiber in Pedler's material to achieve the claimed non-woven blend? and Has the Examiner established that Kwok discloses fibers having the same structure as Appellant's claimed conjugate fibers? We answer both of these questions in the affirmative.

ADDITIONAL RELEVANT FINDINGS OF FACT

- 10) Kwok discloses cotton/polyester blends and batts useful for fiberfill, insulation, padding, resilient cushioning, and the like. (Kwok, col. 1, ll. 53-54). More specifically, Kwok discloses "a thermofusible blend of fibers including a uniform mixture of 75-85 weight percent cotton and 15-25 weight percent ethylene terephthalate/isophthalate copolyester comprising 60-80 mole percent terephthalate and 20-40 mole percent isophthalate and having a melting point of about 230° to 340° F." (Kwok, col. 1, ll. 56-62).
- 11) According to Kwok, "[t]he batts are made by means of a thermal bonding process; and they are durable enough to withstand the stresses of repeated washings. The blends are of a high bulk and a low density." (Col. 1, ll. 15-18).

- 12) Kwok states that “the blends of [the] invention are not limited to cotton and copolyester fibers, alone. If it is desired or required for any reason, other fibers can be added to the blend and the other fibers can perform an active function or can merely be present as a filler material.” (Kwok, col. 2, ll. 52-57). Kwok defines “cotton” as inclusive of “wood pulp and regenerated cellulose such as rayon.” (Kwok, col. 2, ll. 17-19).
- 13) According to Kwok, “for best results when using bicomponent fibers, some corresponding adjustment of proportions may be advisable to optimize results in relation to those preferred when monocomponent binder fibers are blended with cotton.” (Kwok, col. 3, ll. 20-24).
- 14) According to the Specification, conjugate fibers comprise “two different fibre-forming polymeric units arranged side by side so that on heat treatment the fibre becomes spirally crimped.” (Spec. 3, ll. 3-5).

Claim 2

In an obviousness analysis, the fact that “a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.” *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed.Cir.1989) (internal quotations and alterations omitted). We find that the facts and reasons relied on by the Examiner provide a reasonable basis to conclude that one of ordinary skill in the art would have been motivated to combine the references in the manner claimed. Appellant’s arguments are not persuasive in establishing non-obviousness because they fail to address the basis of the Examiner’s proposed combination. More specifically, Appellant has not refuted the Examiner’s finding that one of ordinary skill in the art would have understood from Kwok’s disclosure that the improved durability

achieved by Kwok is not limited to blends of cotton and ethylene terephthalate/isophthalate. Rather, Kwok suggests an appropriate blend includes rayon and ethylene terephthalate/isophthalate. (Ans. 15-16. *See* Findings of Fact 10-12).

Claim 9

“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990). In our view, the Examiner provided a reasonable basis (Ans. 16) to conclude that Kwok discloses bicomponent fibers having substantially the same structure as Appellant’s conjugate fibers (*see* Finding of Fact 14). Thus, the burden was properly shifted to Appellant to establish a patentable distinction between the material of claim 9 and that of Pedler as modified by Gannon and Kwok. Appellant has not met this burden.

Rejection of claim 11 under 35 U.S.C. § 103 as unpatentable over Donovan in view of Gannon

The Examiner finds that Donovan discloses the invention as claimed with the exception of a lyocell fiber. (Ans. 7). The Examiner relies on Gannon for a disclosure of using lyocell in non-woven articles and its advantages over fibers such as viscose rayon fibers. (Ans. 7). The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used lyocell fibers in place of the rayon fibers of Donovan to achieve improved physical properties as noted in Gannon. (Ans. 8). Appellant argues that Gannon’s teaching that its lyocell experiences a reduction in fiber tenacity would dissuade one of

ordinary skill in the art from making the Examiner's proposed substitution. (Br. 10-11).

We find that the Examiner properly established a prima facie showing of obviousness for the reasons well-stated in the Answer. We do not find Appellant's arguments persuasive for essentially those reasons stated above in connection with the rejection of claims 1, 4-8, and 10 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon. Specifically, Appellant focuses on the issue of whether one of ordinary skill in the art would have been motivated to use Gannon's lyocell fibers in Donovan's material. However, the Examiner's rejection is based on the understandings of one of ordinary skill in the art regarding not only Gannon's fibers, but conventional lyocell fibers (*see* Ans. 7; Finding of Fact 7).

*Rejection of claim 12 under 35 U.S.C. § 103 as
unpatentable over Kwok in view of Gannon*

The Examiner finds that Kwok discloses the invention as claimed with the exception of a lyocell fiber. (Ans. 8). The Examiner relies on Gannon for a disclosure of using lyocell in non-woven articles and its advantages over fibers such as viscose rayon fibers. (Ans. 8-9). The Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used lyocell fibers in place of the rayon fibers of Kwok to achieve improved physical properties as noted in Gannon. (Ans. 9). Appellant argues that "the Examiner's motivation to combine is contradicted by the references." (Br. 11). Appellant argues, more specifically, that Gannon teaches that its lyocell experiences a reduction in fiber tenacity. (Br. 11). According to Appellant, this teaching would

dissuade one of ordinary skill in the art from making the Examiner's proposed substitution. (Br. 11).

We find that the Examiner properly established a prima facie showing of obviousness for the reasons well-stated in the Answer. We do not find Appellant's arguments persuasive for essentially those reasons stated above in connection with the rejection of claim 11.

ORDER

The decision of the Examiner rejecting claims 4-7 and 10 under 35 U.S.C. § 112, second paragraph, as lacking antecedent basis for reciting "the cellulosic fibre" is reversed.

The decision of the Examiner rejecting claims 1, 4-8, and 10 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon; claims 2 and 9 under 35 U.S.C. § 103 as unpatentable over Pedler in view of Gannon and further in view of Kwok; claim 11 under 35 U.S.C. § 103 as unpatentable over Donovan in view of Gannon; and claim 12 under 35 U.S.C. § 103 as unpatentable over Kwok in view of Gannon is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(i)(iv).

AFFIRMED

PL Initials:
sld

WOODCOCK WASHBURN LLP
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19107-2891

Appeal 2007-3832
Application 09/308,515